

Acoustic Aeration of Evaporating Body of Water for Enhanced Steam Engine Efficiency

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Introduction

Beginning from the premise that evaporative cooling is enhanced when water is pre-boiled and that this observed effect is predicated upon reduced surface tension resulting from the presence of air molecules in the water, it should be possible to maximally pre-aerate water using structured acoustic energy which, when combined with more conventional heating, would enhance the efficiency of steam-based electrical generators.

Abstract

This proposal entails the emission of structure acoustic energy from acoustic generators positioned above a body of water and directed downward toward its surface. As this calls for the close collocation of acoustic generators with the surface of the water and as these generators work best when not bombarded with steam, I propose that the acoustic generators and a separate well of water be collocated with the primary heating chamber so that a portion of unheated water can be aerated acoustically and subsequently added through a sprinkler system to form a thin layer of highly aerated water at the surface of the primary heating chamber.

Sound waves in the shape of collapsing domes would be directed toward specific points in the aeration chamber. These shaped waves of sound would force air molecules beneath the surface of the water much as evaporation does without using nearly as much energy in order to achieve this effect.

Conclusion

As evaporation is a process which occurs only at the surface of water, heating a body of water from beneath is an intrinsically inefficient process. However, the beneficial effects of aeration of water for reducing the evaporation point of the water can be enjoyed by depositing highly aerated water on a continual basis upon the evaporative surface of the primary evaporation chamber.